SCHMIDT HAENSCH

Product Overview
Pharmaceutical Industry

2025
2026

VariDens
Density Meter

VariPol
Polarimeter

VariRef
Refractometer

Compliant by Design

VariFamily fulfills all major pharmacopoeia requirements – precise, reliable, and audit-ready.

VariRef
Refractometer

Advanced Refractometry for Critical Pharmaceutical Quality Control

Monitoring of peptide synthesis processes | Concentration control of buffer and cell culture media | Measurement of infusion components such as sodium chloride and dextrose | Analysis of betaine solutions | ...

Measuring range	1.290000 – 1.700000 RI / 100 Brix
Temperature range	5 – 100 °C
Resolution	up to 0.000001 RI / 0.001 Brix
Sample volume	min. 10 µL

VariPol
Polarimeter

Accurate Optical Rotation Measurement for Purity Control

Optical rotation measurement of amino acids, cannabidiol, and amines | Analysis of antibiotics such as ofloxacin and alkaloids like codeine and nicotine | Quality assurance of vaccines and control of enantiomeric purity | ...

Measuring range	± 89.9° adjustable to ± 360°
Wavelength	589 nm, 589 + 365 nm or 589 + 405 nm
Temperature range	18 – 25 °C or 10 – 40 °C
Resolution	0.005 or 0.001°
Sample volume	min. 350 µL

VariDens
Density Meter

Optimized Density Testing with Oscillating U-Tube for Pharmaceutical Precision

Alcohol content measurement in pharmaceutical-grade ethanol | Density-based monitoring of active pharmaceutical ingredient (API) formulations | Purity verification of solvents and excipients in pharmaceutical production | ...

Measuring range	0 – 3 g/cm^3
Temperature range	10 – 95 °C
Resolution	up to 0.00001 g/cm^3
Sample volume	min. 2.2 mL

3 Products - Full Compliance:

- European Pharmacopoeia 2.2.6, 2.2.7 and 2.2.5
- U.S. Pharmacopoeia 831, 781 and 841
- Japanese Pharmacopoeia 2.45, 2.49 and 2.56
- FDA CFR Part 11

SH
Laboratory Instruments

SCHMIDT + HAENSCH

Precision meets Compliance

Engineered for Precision. Built for Compliance. Trusted by Pharma.
In an industry where precision meets regulation, our laboratory instruments empower pharmaceutical companies to deliver excellence with confidence. Designed for the highest levels of accuracy, reliability, and compliance, our systems seamlessly support 21 CFR Part 11, GMP, and Pharmacopoeia standards. From secure electronic records and intelligent audit trails to user-specific access control and digital signatures - every detail is engineered to safeguard your data and streamline your workflows. Discover how our technology combines performance and compliance to support your pharmaceutical processes today - and in the future.

21 CFR Part 11

Data Integrity and System Validation
Our Software Aquisys 3 ensures data is encrypted, tamper-proof, and permanently stored, making it impossible to alter or delete records. Electronic signatures are securely linked to users, and all actions are recorded in an immutable, time-stamped audit trail. Herewith, full traceability and compliance are guaranteed throughout the system lifecycle and beyond.

Secure Access and User Authorization
Access to Aquisys 3 is limited to authorized personnel through unique credentials and role-based permissions. Users can only access relevant features to reduce the risk of unauthorized actions. An optional auto-logout feature and clearly defined authority checks support operational control and ensure compliance with regulated workflows.

Long-Term Record Retention and Accessibility
Aquisys 3 guarantees reliable data retention by storing encrypted raw data both on the instrument and in secure backups. Data remains accessible and unchanged throughout the retention period. Reports can be generated in human-readable formats (PDF, CSV) and include full metadata such as timestamps, user roles, and signature history, ensuring trust in both digital and printed outputs.

Audit Trails and Record Traceability
All system operations, changes, and user actions are logged in a secure, time-stamped audit trail. Each log entry includes the user ID and cannot be altered or deleted. The audit trail can be exported for review, while the original remains encrypted on the device. This enables full visibility of all activities and meets agency expectations for transparency and accountability.

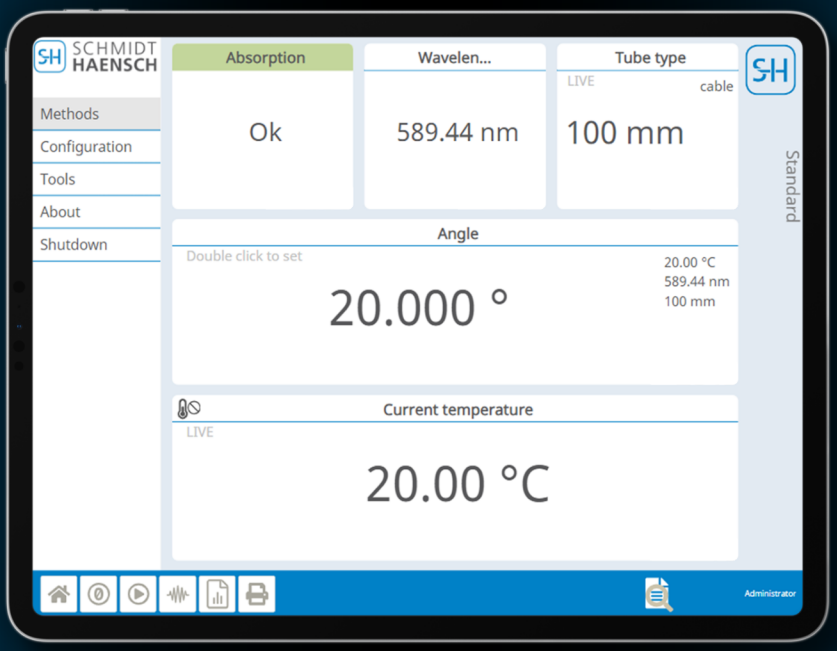
Electronic Signatures and Compliance Assurance
Electronic signatures in Aquisys 3 are unique to each user and cannot be reassigned. Every signature is linked to the corresponding record with complete metadata, including purpose, date, and time. Signature usage complies with legal and regulatory requirements, providing a reliable foundation for electronic approvals. While some responsibilities lie with the system owner, the software supports all necessary controls and safeguards.

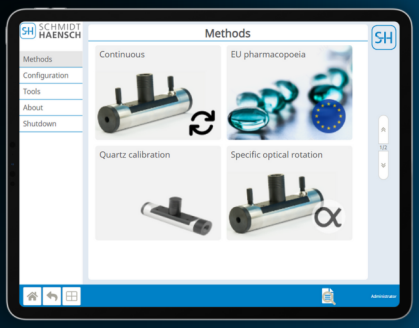
Scan for more Information

about Aquisys 3 – our 21 CFR Part 11 compliant software for the VariFamily

Meet Aquisys 3

Our truly intuitive user interface with state-of-the-art connectivity





Manage your data from anywhere using mobile or desktop devices, with reliable connectivity via Intranet, Ethernet, or Wi-Fi.

Embrace the next level of convenience and efficiency with Aquisys 3. Tailored for both mobile and desktop devices, it ensures that managing your lab work takes just a few clicks. Whether connected via Intranet, Ethernet, or Wi-Fi, our system guarantees fast, reliable access to your data - anytime and anywhere. This seamless integration across different platforms enhances productivity and offers the flexibility to adapt to any analytical workflow.

Choose from our wide range of measurement methods and scales, or customize your own to meet your specific needs.

Explore our diverse selection of measurement methods and scales, suitable for various needs, from standard to specialized applications. For unique requirements, easily configure your own methods and scales or contact our in-house lab service. We will help you create your personalized measurement scale. Our system combines precision, reliability, and flexibility, ensuring your data is accurate, secure, and tailored to your project's specific demands.

One Workflow. One Partner.

Full Control and Compliance From Raw Material to Final Fill

1. Raw Material Verification

Assurance from the Very Beginning

Reliable identification of raw materials is the foundation of every compliant pharmaceutical process. Using refractometers, polarimeters, and density meters, critical substance parameters can be verified with precision before production begins. Whether for raw solvents, active ingredients, or excipients, our instruments provide robust and traceable data to support regulatory compliance and ensure batch-to-batch consistency.

2. In-Lab Quality Control

Reliable Results for Accurate Formulations

Throughout pharmaceutical production, laboratory analysis plays a vital role in maintaining process stability and formulation accuracy. With precise optical rotation, refractive index, and density measurements, critical variables can be monitored in the laboratory. Devices such as polarimeters help track chiral purity and reaction progress, ensuring that every intermediate meets defined specifications before advancing to the next stage.

3. In-Process Monitoring

Real-Time Control for Seamless Production

For continuous processes, real-time measurement directly in the production line is a core element of modern Process Analytical Technology (PAT). Our inline refractometry solutions are designed for hygienic pharmaceutical environments and deliver uninterrupted monitoring of critical parameters. This enables immediate process adjustments, ensures stable throughput, and minimizes downtime - supporting consistent product quality and full GMP compliance.

4. Final Product Testing

Reliable Quality Control Before Batch Release

At the final stage, quality control must confirm that all pharmaceutical specifications have been met. Instruments equipped with flow-through cells enable rapid and hygienic analysis of refractive index, concentration, and solution stability. These measurements are essential for verifying infusion solutions, sterile preparations, and finished dosage forms - providing a data-driven basis for confident batch release.

SCHMIDT HAENSCH

SCHMIDT + HAENSCH has developed from a rich history of engineering and scientific research. The family-run company was founded by Franz Schmidt and Herrmann Haensch in 1864 and has been part of innovative German technology from the beginning.

Franz Schmidt

Herrmann Haensch

1864 SCHMIDT + HAENSCH founded by Franz Schmidt and Herrmann Haensch in Berlin

1864 Developing quartz wedge polarimeter in cooperation with Karl Ventzke

1879 Manufacturing microscopes for Rudolph Virchow

1881 Manufacturing interferometer for Michelson-Morley experiment

1895 Manufacturing of Abbe refractometer with Pulfrich-principle

1905 Manufacturing circle polarimeter for Swiss Nobel Prize winner Alfred Werner

1921 Manufacturing color mixing apparatus according to Helmholtz-König

1963 Developing and manufacturing of world's first fully automatic sugar polarimeter with digital display and printer

1986 First fully-automatic table refractometer with measuring range up to 1.72000 and a resolution of 10-5 Brix

1992 Developing first refractometers for process control

2005 Introduction of patented multi-wavelength refractometer

2018 Launch of the VariFamily - refractometer, polarimeter and density meter

2022 Development of the SpectroPol - multi-wavelength scanning polarimeter

2023 Introduction of the iCS - the world's smallest process refractometer

2024 SCHMIDT + HAENSCH celebrates 160-year anniversary

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